

ABSTRACT

copy The present invention has an object to provide an optical multiplexing apparatus of a low cost capable of reliably multiplexing a plurality of optical signals having a narrow wavelength interval, while suppressing the nonlinear optical effect and the crosstalk, and a multiplexing method. The optical multiplexing apparatus comprises first optical multiplexing means for multiplexing, among a plurality of optical signals that are input with directions of linear polarization of the neighboring wavelengths being differed to each other, optical signals having odd wavelength numbers while maintaining their polarization states, second optical multiplexing means for multiplexing optical signals having even wavelength numbers while maintaining their polarization states, and third optical multiplexing means for multiplexing, at an output unit thereof through first and second input units having sharp filtering characteristics, the optical signals multiplexed by the first and second optical multiplexing means, to output WDM signal light.